

*E2* 45 (Amended). A reduced energy binder as in claim 68 further comprising an amount of inert plasticizer.

*E3* 49 (Amended). A reduced energy binder as in claim 68 wherein the energetic plasticizers are selected from nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

*CH Cont.* 51 (Three Times Amended). An improved high solid propellant composition comprising by weight:

- (a) about 10% cured poly(tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer  $Mw_n \geq 6000$  binder polymer using an isocyanate curing agent;
- (b) about 11% nitroglycerin plasticizer;
- (c) about 2.5% triacetin plasticizer;
- (d) about 22% aluminum; and
- (e) about 53% ammonium perchlorate oxidizer.

52 (Three Times Amended). An improved high solids propellant composition comprising by weight:

- (a) about 7% cured poly(tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer,  $Mw_n \geq 6000$  binder polymer using an isocyanate curing agent;
- (b) about 6.5% n-butyl-2-nitratoethyl nitramine;
- (c) about 1.4% triacetin;

- E4  
Amended.
- (d) about 22% aluminum;
  - (e) about 60% ammonium perchlorate; and
  - (f) about 2% dicyandiamide.

E5

55 (Amended). A reduced energy binder as in claim 69 further comprising an amount of inert plasticizer.

E6

57 (Amended). A reduced energy binder as in claim 69 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

E7  
Cont.

62 (Three Times Amended). An improved high solids propellant composition comprising by weight:

- (a) about 11% cured poly(tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer,  $MW_n$  about 6,000 binder polymer using an isocyanate curing agent;
- (b) about 12% plasticizer selected from the group consisting of nitroglycerin and trimethylolethane trinitrate and combinations thereof;
- (c) about 22% aluminum; and
- (d) about 53% ammonium perchlorate.

63(Three Times Amended). An improved high solids propellant composition comprising by weight:

- E7*  
*Conced.*
- (a) about 11.3% cured poly (tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer,  $MW_n$  about 6,200 binder polymer using an isocyanate curing agent;
  - (b) about 12.2% nitroglycerin plasticizer;
  - (c) about 22% (30 $\mu$ ) aluminum; and
  - (d) about 53% (200 $\mu$ ) ammonium perchlorate oxidizer.

Please add new claims 65-69 as follows:

65(New). An improved propellant composition comprising a fuel, reduced energy binder, and an oxidizer, wherein said reduced energy binder consists essentially of:

- E8*  
*Cont.*
- (a) an amount of one or more cured high molecular weight adipate binder polymers, including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an isocyanate curing agent and wherein the molecular weight ( $MW_n$ ) of the uncured poly(tetramethylene adipate) prepolymer is above 4000; and
  - (b) an amount of energetic plasticizer wherein the plasticizer to polymer ratio is less than about 1.6:1.

66(New). A propellant composition as in claim 65 wherein said reduced energy binder further comprises an amount of inert plasticizer material.

67(New). A propellant composition as in claim 66 wherein said inert plasticizer is triacetin.

68(New). A reduced energy binder for energetic compositions consisting essentially of:

- CS  
Cont.
- (a) an amount of one or more cured high molecular weight adipate binder polymers including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an isocyanate curing agent and wherein the molecular weight ( $MW_n$ ) of the uncured poly(tetramethylene adipate) prepolymer is above 4000; and
  - (b) an amount of energetic plasticizer wherein the plasticizer to polymer ratio is less than about 1.6:1.

69(New). A reduced energy binder for energetic compositions consisting essentially of:

- (a) an amount of one or more cured high molecular weight adipate binder polymers including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an